

Unit: Acid-Base

IB Expectations/ Assessment Criteria

DP Group 4: Chemistry, DP - Age 16-18, Aims

All the Diploma Programme experimental science courses should aim to:

- 1. provide opportunities for scientific study and creativity within a global context that will stimulate and challenge students
- 2. provide a body of knowledge, methods and techniques that characterize science and technology
- 3. enable students to apply and use a body of knowledge, methods and techniques that characterize science and technology
- 4. develop an ability to analyse, evaluate and synthesize scientific information
- 5. engender an awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- 6. develop experimental and investigative scientific skills
- 7. develop and apply the students' information and communication technology skills in the study of science
- 8. raise awareness of the moral, ethical, social, economic and environmental implications of using science and technology
- 9. develop an appreciation of the possibilities and limitations associated with science and scientists
- 10. encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method.

Approach

As the topic is very close to the real life, a practical oriented approach and group discussion method is used to teach the chapter. Acid bases are most common topic among young children as it's a part of daily life. As the topic is very close to the real life, a practical oriented approach and group discussion method is used to teach the chapter. Acid bases are most common topic among young children as it's a part of daily life

Significant concept(s) / Considerations

The terms acid and bases are relative. The perspective makes a huge change in its definition and how it reacts to a new substance, in a given situation also varies with changing definitions.

Guiding Questions

What can be called as acid or base. How they behave in various given environment, their threats and blessing

Learner Profile

- Inquirers
- Knowledgeable
- Thinkers

| | | |
|---|---|--|
| | <ul style="list-style-type: none">▪ Principled▪ Reflective | |
| Central Idea / Content | Learning Objectives | |
| 8.1 Theories of acids and bases 8.2 Properties of acids and bases 8.3 Strong and weak acids and bases 8.4 The pH scale 18.1 Calculations involving acids and bases 18.2 Buffer solutions 18.3 Salt hydrolysis 18.4 Acid–base titrations 18.5 Indicators | Every day in life we face acids and base, in different medium and different context, some are helpful some are not, but a knowledge of each, acid and base and how they work, and how to work with them makes lives easier and comforting. More over nature is neither very acidic or basic, it balances between the both, and it’s a vital lesson for natural way of living. | |
| <u>Assessment</u> | | |
| Information Literacy & ICT | International Mindedness | TOK |
| 1. Virtual simulation of buffer to understand the buffer action is used Virtual simulations of various types of acids and bases using various indicators are done with data-logging software and graphs are plotted and role of indicator, buffer region analyzed | There are various ways acidity of basicity of a solution is measure in various parts of the world, but pH scale has made the understanding of acidity easier to non-chemists | The distinction between artificial and natural scales could be discussed in the context of pH scale |
| Strategies / Activities / Differentiation | | Resources |
| This topic is taught with lots of hands on activity and virtual activity. Every lesson is backed up by on the class work which enforced learning. The students who has problem in understanding the basic chemistry behind it were given easier problems for | | 1. IB chemistry-Geoff Neuss 2. Chemistry text book-Catrin Brown 3. IB revision guide-Geoff Neuss 4. PowerPoint presentations as teaching aid (on core and |

| | |
|---|---|
| confidence building and then moved to normal main stream set of works | advanced concepts) 5. Web resources (teacher tube etc) 6. IB-Question bank on Acid base equilibrium 7. Worksheet on a. Conjugate acid base pair b. Lewis acid base identification c. Acid base properties d. Acid base reactions |
| Unit Reflections | |